CLAIMS

What is claimed is:

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1. A method for performing an inverse transform on a block of transform coefficients, the block having rows and columns, the method comprising:

identifying zero patterns in the block of transform coefficients to derive zero pattern information; and

performing one-dimensional inverse transforms on a subset of the total number of rows and columns in the block of transform coefficients by using zero pattern information.

- 2. The method of claim 1, wherein the block of transform coefficients is an MPEG encoded block of 8x8 discrete cosine transform (DCT) coefficients.
- 3. The method of claim 1, wherein performing one-dimensional inverse transforms comprises performing one-dimensional transforms on a subset of the total number of columns in the block of transform coefficients.
- 4. The method of claim 3, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the rows in the block of transform coefficients.
- 5. The method of claim 1, wherein performing one-dimensional inverse transforms comprises performing one-dimensional transforms on a subset of the total number of rows in the block of transforms coefficients.
- 6. The method of claim 5, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.
- 7. The method of claim 1, wherein performing one-dimensional inverse transforms occurs during transcoding.
- 8. The method of claim 7, wherein the transcoding is performed on MPEG bitstreams.
- 9. The method of claim 1, wherein performing one-dimensional inverse transforms occurs during decoding.
- 10. The method of claim 9, wherein the decoding is performed on MPEG bitstreams.

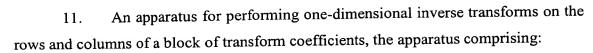
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memory; and

- a processor coupled with memory, the processor configured to identify zero pattern information associated with the block of transform coefficients, perform one-dimensional inverse transforms on a subset of rows and columns of the block of transform coefficients using the zero pattern information.
- 12. The apparatus of claim 11, wherein the block of transform coefficients is an MPEG encoded block of 8x8 DCT coefficients.
- 13. The apparatus of claim 11, wherein performing one-dimensional inverse transforms comprises performing one-dimensional transforms on a subset of the total number of columns in the block of transforms coefficients.
- 14. The apparatus of claim 13, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the rows in the block of transform coefficients.
- 15. The apparatus of claim 11, wherein performing one-dimensional inverse transforms comprises performing one-dimensional transforms on a subset of the total number of rows in the block of transforms coefficients.
- 16. The apparatus of claim 15, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.
- 17. The apparatus of claim 11, wherein performing one-dimensional inverse transforms occurs during transcoding.
- 18. The apparatus of claim 17, wherein the transcoding is performed on MPEG bitstreams.
 - 19. The apparatus of claim 11, wherein performing one-dimensional inverse transforms occurs during decoding.
 - 20. The apparatus of claim 19, wherein the decoding is performed on MPEG bitstreams.
 - 21. The apparatus of claim 11, wherein the memory and processor are associated with a cable modern headend line card.
 - 22. The apparatus of claim 11, wherein the processor is further configured to rescale data to meet bandwidth constraints.

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- 23. The apparatus of claim 11, wherein the memory and processor are associated with a transcoding system.
- 24. An apparatus for performing an inverse transform on a block of transform coefficients, the block having rows and columns, the method comprising:

means for identifying zero patterns in the block of transform coefficients to derive zero pattern information; and

means for performing one-dimensional inverse transforms on a subset of the total number of rows and columns in the block of transform coefficients by using zero pattern information.

- 25. The apparatus of claim 24, wherein the block of transform coefficients is an MPEG encoded block (8x8 DCT coefficients).
- 26. The apparatus of claim 24, wherein performing one-dimensional inverse transforms comprises performing one-dimensional transforms on a subset of the total number of columns in the block of transforms coefficients.
- 27. The apparatus of claim 26, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the rows in the block of transform coefficients.
- 28. The apparatus of claim 24, wherein performing one-dimensional inverse transforms comprises performing one-dimensional transforms on a subset of the total number of rows in the block of transforms coefficients.
- 29. The apparatus of claim 28, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.
- 30. The apparatus of claim 24, wherein performing one-dimensional inverse transforms occurs during transcoding.
 - 31. The apparatus of claim 30, wherein the transcoding is performed on MPEG bitstreams.
 - 32. The apparatus of claim 24, wherein performing one-dimensional inverse transforms occurs during decoding.
- 30 33. The apparatus of claim 32, wherein the decoding is performed on MPEG bitstreams.

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34. A computer readable medium comprising computer code for performing an inverse transform on a block of transform coefficients, the block having rows and columns, the computer readable medium comprising:

computer code for identifying zero patterns in the block of transform coefficients to derive zero pattern information; and

computer code for performing one-dimensional inverse transforms on a subset of the total number of rows and columns in the block of transform coefficients by using zero pattern information.

- 35. The computer readable medium of claim 34, wherein the block of transform coefficients is an MPEG encoded block.
- 36. The computer readable medium of claim 34, wherein performing onedimensional inverse transforms comprises performing one-dimensional transforms on a subset of the total number of columns in the block of transforms coefficients.
- 37. The computer readable medium of claim 36, wherein performing onedimensional inverse transforms further comprises performing one-dimensional transforms on all the rows in the block of transform coefficients.
- 38. The computer readable medium of claim 34, wherein performing onedimensional inverse transforms comprises performing one-dimensional transforms on a subset of the total number of rows in the block of transforms coefficients.
- 39. The computer readable medium of claim 38, wherein performing onedimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.
- 40. The computer readable medium of claim 34, wherein performing one-dimensional inverse transforms occurs during transcoding.
- 41. The computer readable medium of claim 40, wherein the transcoding is performed on MPEG bitstreams.
- 42. The computer readable medium of claim 34, wherein performing onedimensional inverse transforms occurs during decoding.
- 43. The computer readable medium of claim 42, wherein the decoding is performed on MPEG bitstreams.